

# Work Order ID 68676

Tuesday, April 19, 2011 3:59:17 PM



Page 1

Item ID: D206-642-545

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube

Start Date: 4/19/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 5/16/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

*[Signature]*

Date: 12-04-19

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3274	Rev D								

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D206-642-545

CHG002

*[Handwritten signature]*

*[Handwritten notes: 12-06-04, Car MLS 12-6-4]*

*[Handwritten: B68676]*

NOTE: Date & Initial  
H:\FORMS\Quality Assurance\approved QA\CHG

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng/ Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Fabricate as per Dwg: D3274-043.

2- Bend FWD end of tube using bend prog D3274 FWD dwg D3274, cut fwd end tube with saw table setup D3274

3- Remove fwd indexing ridge as per dwg D3274 and prepare for welding

4 -Weld Fwd Cap as per Dwg D3274 and OSI.004. Use aluminum rod.

A/R□□Aluminum Rod□

5- Grind welds flush to Fwd cap on top surface only.

6- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

7- Drill Aft cap pilot hole using DT8025

8 -Cleco DT8025 in position and install pilot hole drill Jig DT8891. Drill 3/16" pilot holes as per Dwg D3274

9- Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch#

10- Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

Handwritten signature and date: 11-5-26

Handwritten signature and date: 11/08/09

Handwritten notes: m12860/m115778, BE 11/08/09, BE 11/06/09

Handwritten signature and date: 11/08/09, 11/06/14

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Customer:

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Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

114

0.00



QC

Memo

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

~~S. A. 10/15~~  
S. A. 10/15/10

116

0.00



QC

Memo

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

~~S. A. 10/15~~  
S. A. 10/15/10

120

0.00



HandFinish

Memo

Hand Finishing

Chemical Conversion Coat per QSI005 4.1

0.00

~~A. E. 11-08-12~~  
A. E. 11-08-10

1 0

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Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130



QC

Quality Control

QC3- Inspect Part Finish

QC

Memo

0.00

0.00

140



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

0.00

1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274

2-deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube

3-Bond web in place as per Dwg D3274 &amp; QSI 015.

A/R ☐ Sikaflex-291 ☒ M120813 ☐Sikaflex expire date: ☐ 12-08-13 ☐Start: ☐ 15:20 ☐ Time: ☐ 12-4-10 ☐Finish: ☐ 15:56 ☐ Time: ☐ 12-4-10 ☐

(Adhere for 12 hours)

3 of 11/08/12

&gt;

CF 12-4-10

W/O:		WORK ORDER CHANGES					
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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

150

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

1 0 BER/04/11

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2  
OPEN HOLES TO .297"3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBE  
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

6-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod  
A/R ☐ Aluminum Rod m129164 BE 12-04-26

7-Grind cross bolt welds flush as per Dwg D3274.

8-Counterbore 5/16" x 0.750" deep as per Dwg D3274. Use DT8743 visual aid Jig and deburr.

① SAD 12-04-11

① CF 12-4-11

&gt; AC/CC 12-5-10

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Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

170

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

8/16/11

180

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/16/14

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

7/6 12-5-14

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

8-15  
3200F  
8-45

1X

MA  
12/05/14

210

QC3- Inspect Part Finish

0.00



QC

Quality Control

Memo

1X

220

HAND FINISHING RESOURCE #1

0.00



HandFinish

Hand Finishing

Memo

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.

A/R ☐ N/A ☐ LPS-3 ☐ M111596

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a

A/R ☐ Sikaflex-291 ☐ 841122 ☐

Sikaflex expire date: 13101

1X

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230

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect Nut Plate &amp; Inserts

1  $\phi$  12135-14

240

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Install wearpads &amp; gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/R ☐ Sikaflex-291 ☐ 11121221Sikaflex expire date: ☐ 13101

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R ☐ LPS-3 Batch: 111/14

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R ☐ Sikaflex-291 ☐ 11121221Sikaflex expire date: ☐ 131011 x  $\phi$  all nt ask

W/O:		WORK ORDER CHANGES					
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Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

250



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00 *Scrub*

Memo

260



Packaging

Packaging

Packaging

0.00

0.00

Memo

Identify and pack for shipping as per PPP D206-642-545

Location: \_\_\_\_\_

PPP rev: \_\_\_\_\_

270



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

0.00

Memo

*946/40**12/6/17**MF 12-06-05*

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# Picklist Print

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Work Order ID: 68676

Parent Item: D206-642-545

Parent Item Name: Skidtube




Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 06-10-06 JLM  
 IPP Rev:B Added SS Wearplates & Gaskets 07-02-23 JLM  
 IPP Rev:C ECN 1080p 07-12-06 DD verified by:  
 IPP Rev:D as per PAR 08-015 08-04-17 DD verified by:ec  
 IPP Rev:E 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-1-190  Extrusion Round 3" 206		Manufactured	No			110	Each	34.4000	1				
<div> <div>Location</div> <div>HALL</div> <div>59834</div> </div> <div> <div>Loc Qty</div> <div>34.4</div> <div>34.4</div> </div> <div> <div>Loc Code</div> <div></div> </div>													
D3285-1  Cap		Manufactured	No			110	Each	110.0000	1				
<div> <div>Location</div> <div>LG002</div> <div>52511</div> <div>52647</div> </div> <div> <div>Loc Qty</div> <div>110</div> <div>63</div> <div>47</div> </div> <div> <div>Loc Code</div> <div></div> </div>													
D3282-041  Float Web (206L/407)		Manufactured	No			140	Each	9.0000	1				
<div> <div>Location</div> <div>LG</div> <div>65293</div> <div>66363</div> </div> <div> <div>Loc Qty</div> <div>9</div> <div>2</div> <div>7</div> </div> <div> <div>Loc Code</div> <div></div> </div>													

DD 11-7-28  
 DD 11-5-26  
 BG 11/06/02  
 CF 12-4-10

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Parent Item: D206-642-545

Parent Item Name: Skidtube

Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

D2649 Manufactured No 160 Each 86.0000 12 12



Cross Bolt Spacer



BE 12/04/25  
B 79566 \*12

Location Loc Qty Loc Code

LG 85

68224 85

LG001 1

65317 1

D3275-1 Manufactured No 160 Each 214.0000 37 37



Crossbolt Spacer



BE 12/04/25  
B 80184 \*17

Location Loc Qty Loc Code

LG 71

67767 71

LG002 143

66109 35

66930 108

CCR264SS3-3 Purchased No 220 Each 163.0000 2 2



Cherry Rivet



all nlost 14

Location Loc Qty Loc Code

FP-B 2

113973 2

ST311 161

113973 2

117086 159

N 117849

A2

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Tuesday, April 19, 2011 3:59:26 PM

Work Order ID: 68676

Parent Item: D206-642-545

Parent Item Name: Skidtube

Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-03

Purchased

No

220

Each

1,262.000

2

2



Cherry Rivet



HL 12/05/11

Location

Loc Qty

Loc Code

FP-B

16

110139

16

ST311

1246

114859

1246

x2

D3415-041

Manufactured

No

220

Each

51.0000

1

1



Nut Plate



HL 12/05/11

Location

Loc Qty

Loc Code

ST053

51

33842

7

67605

44

x1

ALS7-1032-130

Purchased

No

240

Each

449.0000

78

78



Insert \* ALS4-1032-130



HL 12/05/11

Location

Loc Qty

Loc Code

ST281

200

117331

200

ST282

249

116800

249

M121269 x78

AN3C4A

Purchased

No

240

Each

2,358.000

80

80



BOLT



HL 12/05/11

Location

Loc Qty

Loc Code

ST350

2358

116924

358

117094

1000

117313

1000

M121536 x80

Tuesday, April 19, 2011 3:59:26 PM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, April 19, 2011 3:59:26 PM

Work Order ID: 68676

Parent Item: D206-642-545

Parent Item Name: Skidtube

Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

AN4C5A Purchased No  
BOLT

240 Each 543.0000 1 1



Yl 12/05/14

Location

Loc Qty

Loc Code

FP-B

116

112243

116

ST345

427

112243

427

AN960C10L NAS1149C0332 Purchased No  
R

240 Each 0.0000 80 80



washer

11121509



(x80) Yl 12/05/14

AN960C416 NAS1149C0463 Purchased No  
R

240 Each 15.0000 1 1



washer

11119097



(x1) Yl 12/05/14

Location

Loc Qty

Loc Code

ST346

15

100993

15

D2646 Manufactured No

240 Each 56.0000 1 1



Aft Cap



Yl 12/05/14

Location

Loc Qty

Loc Code

FP006

56

62678

56

B78018

xl

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, April 19, 2011 3:59:26 PM

Work Order ID: 68676

Parent Item: D206-642-545

Parent Item Name: Skidtube

Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

D3413-1

Manufactured No

240

Each

47.0000

1

1



Ring -



HL 12/05/14

Location

Loc Qty

Loc Code

ST420

22

B76754

VI

62961

8

66387

14

ST473

25

53446

1

65294

10

66945

14

D3535-15

Manufactured No

240

Each

16.0000

1

1



Wearshoe



HL 12/05/14

Location

Loc Qty

Loc Code

FP018

16

B80328

VI

66238

4

66558

12

D3535-23

Manufactured No

240

Each

15.0000

1

1



Wearshoe



HL 12/05/14

Location

Loc Qty

Loc Code

FP021

15

B81355

VI

63571

1

66236

1

67594

13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, April 19, 2011 3:59:27 PM

Work Order ID: 68676

Parent Item: D206-642-545

Parent Item Name: Skidtube

Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

D3535-35      Manufactured      No      240      Each      18.0000      1      1  
Wearshoe

LocationLoc QtyLoc Code

FP018

18

B83638

xl

65926

10

67598

8

D3535-39      Manufactured      No      240      Each      12.0000      1      1  
Wearshoe

LocationLoc QtyLoc Code

FP018

12

B74513

xl

64076

12

D3536-15      Manufactured      No      240      Each      29.0000      1      1  
Gasket

LocationLoc QtyLoc Code

FP011

29

B81343

xl

63568

3

66559

26

D3536-23      Manufactured      No      240      Each      34.0000      1      1  
Gasket

LocationLoc QtyLoc Code

FP011

34

B83372

xl

43406

1

53468

1

63238

1

66240

6

66560

25

Tuesday, April 19, 2011 3:59:27 PM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Tuesday, April 19, 2011 3:59:27 PM

Page 7

Work Order ID: 68676

Parent Item: D206-642-545



Parent Item Name: Skidtube

Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

D3536-35      Manufactured      No      240      Each      23.0000      1      1  
  gl 12/05/11  
 Gasket

Location

Loc Qty

Loc Code

FP012

23

B81340

66237

11



~~B81340~~

67599

12

~~B81343~~

x1

D3536-39      Manufactured      No      240      Each      17.0000      1      1  
  gl 12/05/11  
 Gasket

Location

Loc Qty

Loc Code

FP015

17

B82252



63578

5

x1

66241

12

D3537-1      Manufactured      No      240      Each      54.0000      9      9  
  gl 12/05/11  
 Wearpad

Location

Loc Qty

Loc Code

FP017

54

B81360

63313

2



x5

66935

52

B81362

x4

D3537-3      Manufactured      No      240      Each      15.0000      1      1  
  gl 12/05/11  
 Wearpad

Location

Loc Qty

Loc Code

FP017

15

B78836

35697

1

x1

65929

14

Tuesday, April 19, 2011 3:59:27 PM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 8

Tuesday, April 19, 2011 3:59:27 PM

Work Order ID: 68676



Parent Item: D206-642-545



Parent Item Name: Skidtube

Start Date: 4/19/2011

Required Date: 5/16/2011

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured No

240

Each

1,387.000

2

2



Phenolic Washer



yl 12/05/11

Location

Loc Qty

Loc Code

FP-A

37

52505

37

ST074

1350

64177

850

66821

500

B76277

x2

Tuesday, April 19, 2011 3:59:27 PM

Shop Packet Print

Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

RELEASED

07.02.12

DEO ATTACHED

DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED #	APPROVED #	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY	SCALE NTS
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 68674  
2/11-04-19

**GENERAL NOTES:**

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

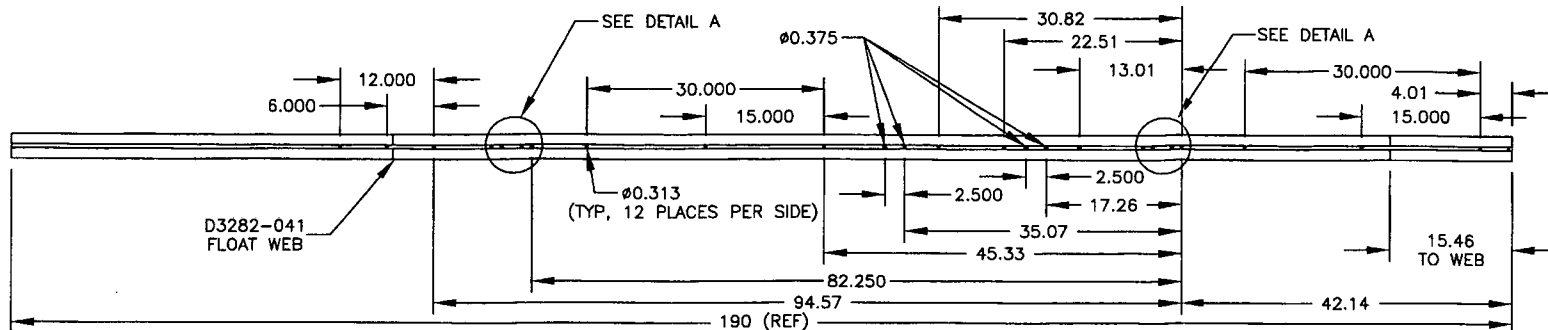
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

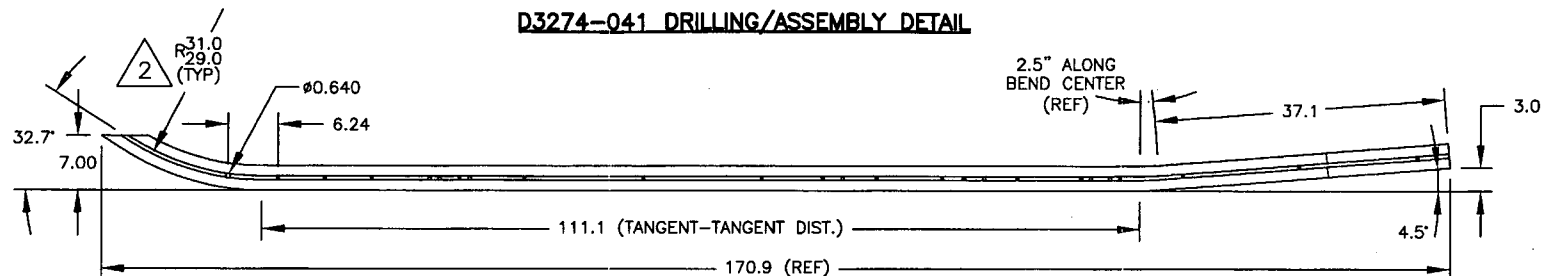
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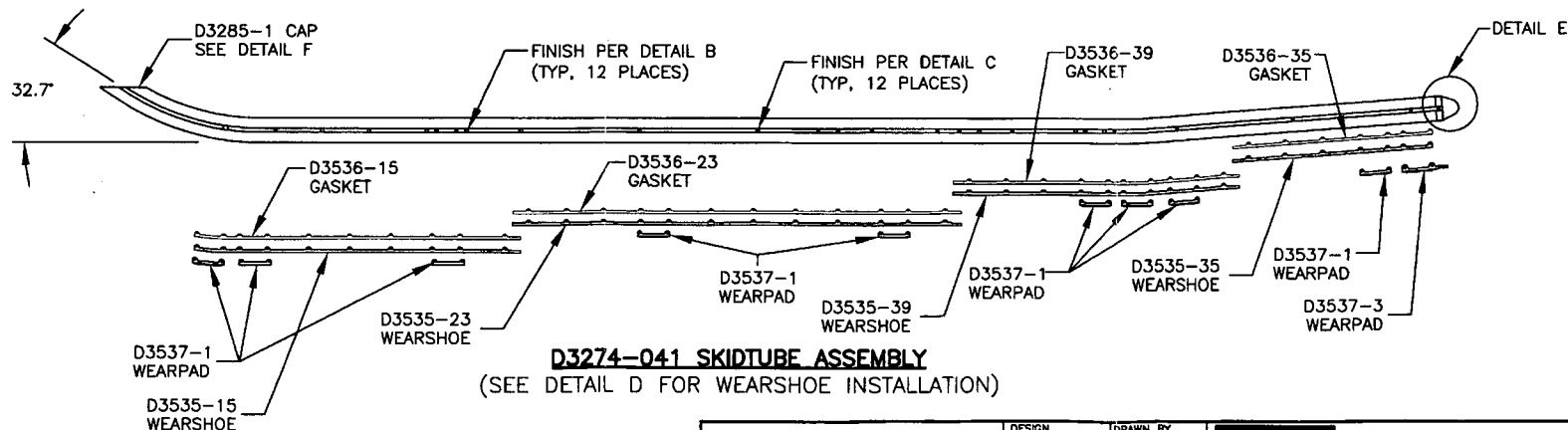
u/c 68674



**D3274-041 DRILLING/ASSEMBLY DETAIL**



**D3274-041 BEND/DRILLING DETAIL**



**D3274-041 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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		CP	PH	PORT WADSWORTH, OH	
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				D3274	SHEET 2 OF 4
		DATE		TITLE	SCALE
		06.12.19		SKIDTUBE ASSEMBLY	1:15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

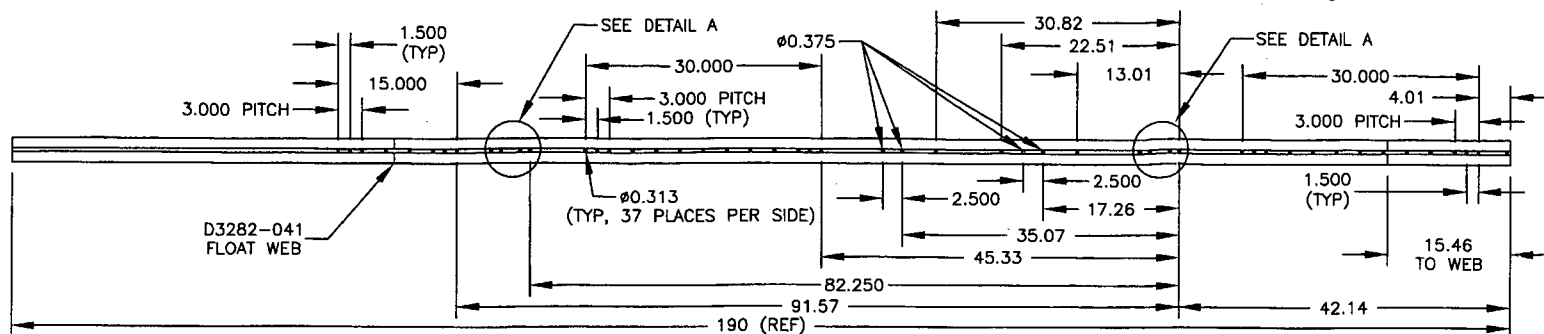
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

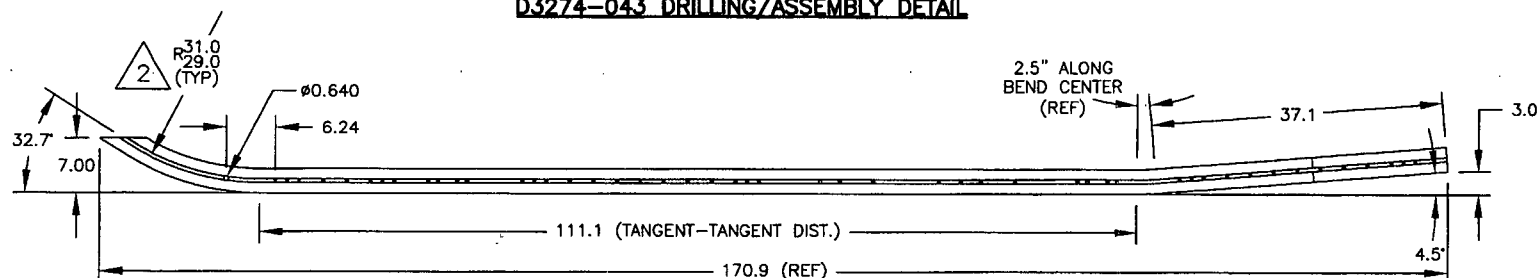
**NOTE:** Date & initial all entries



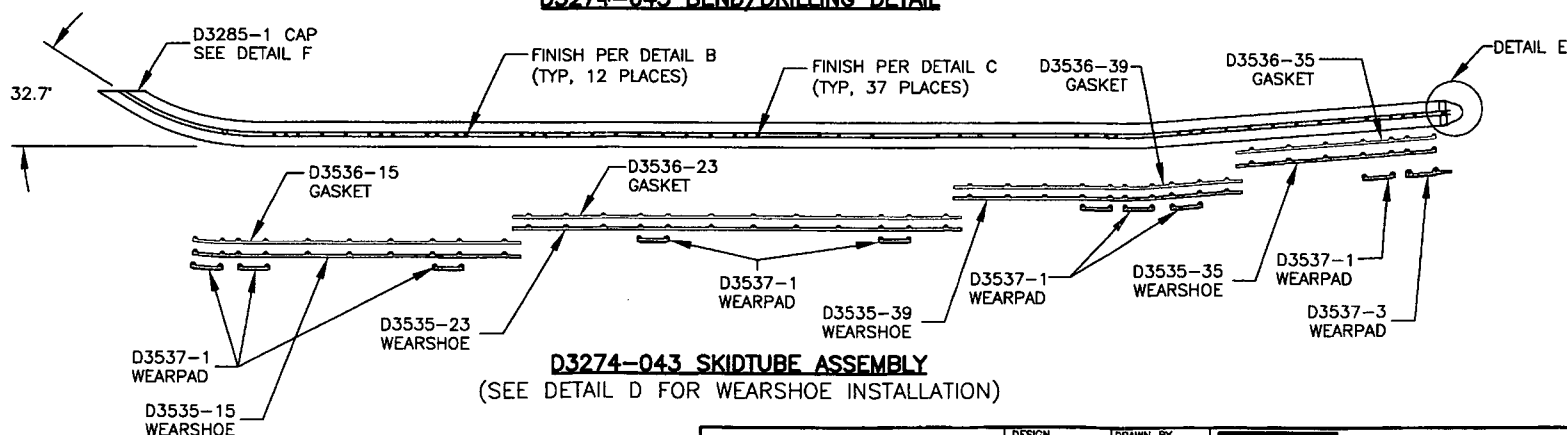
DEO ATTACHED



**D3274-043 DRILLING/ASSEMBLY DETAIL**



**D3274-043 BEND/DRILLING DETAIL**



**D3274-043 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

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DESIGN	CP	DRAWN BY	PH	<b>DART</b>	DART AEROSPACE USA, INC.
CHECKED	#	APPROVED	#	DRAWING NO.	D3274
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	REV. D	SHEET 3 OF 4
				SCALE	1:15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

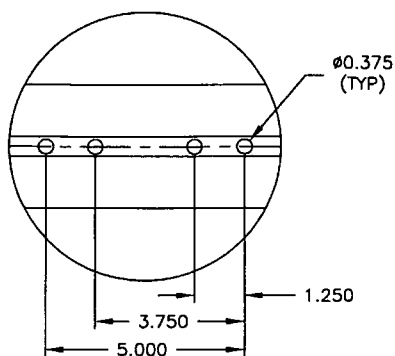
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

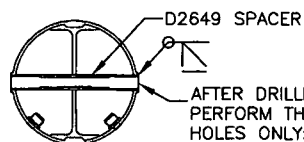
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# **DETAIL A: DRILL DETAIL**

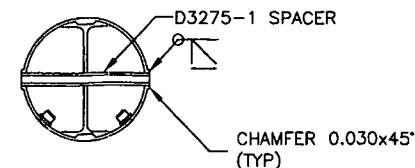


# **DETAIL B** FOR Ø0.375 HOLES ONLY

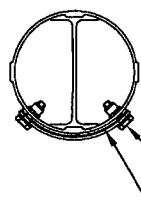


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.375  
HOLES ONLY:
1. CHAMFER HOLE 0.030x45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO Ø0.313x0.75 DEEP

# **DETAIL C** FOR Ø0.313 HOLES ONLY

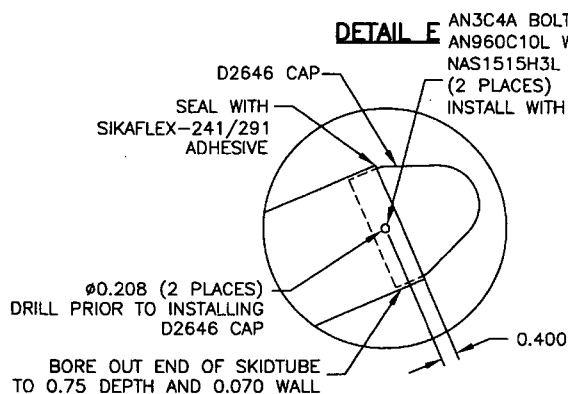


# **DETAIL D**



- ALS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)  
GASKET/WEARSHOE/WEARPAD (REF)

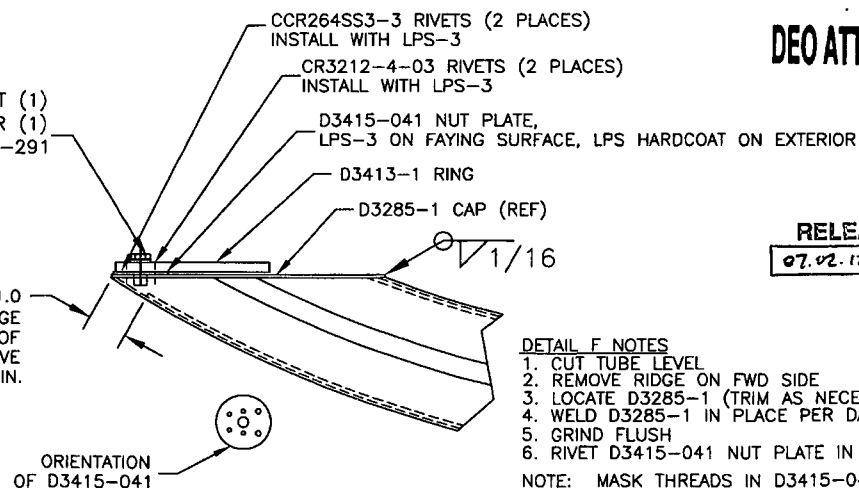
# **DETAIL E**



- AN4C5A BOLT (1)  
AN960C416 WASHER (1)  
INSTALL WITH SIKAFLEX-241/-291

1.0  
REMOVE RIDGE  
ON INSIDE OF  
SKIDTUBE LEAVE  
0.070 MIN.

# **DETAIL F: END FINISHING DETAIL**



- DETAIL F NOTES**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

**DEO ATTACHED**

**RELEASED**  
07.02.12

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THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.		CP	PH	DRAWING NO. D3274	REV. D
		CHECKED	APPROVED		SHEET 4 OF 4
		DATE		TITLE SKIDTUBE ASSEMBLY	SCALE 1:3
		06.12.19			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

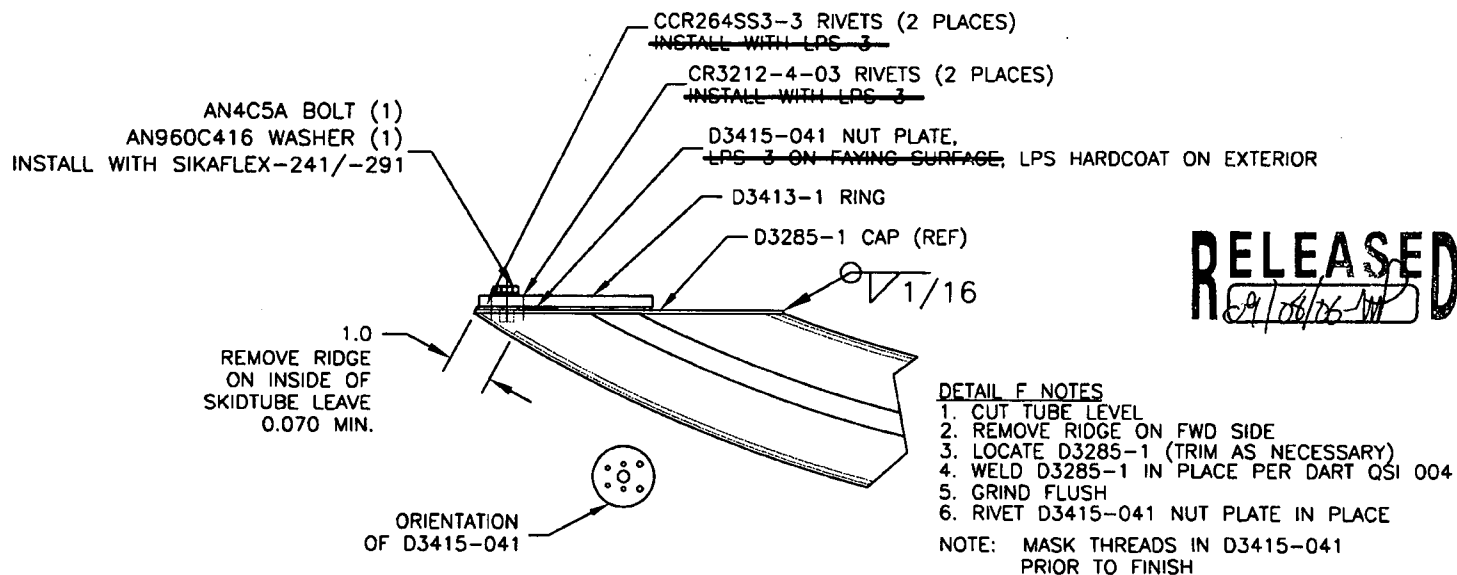
DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	<b>DART AEROSPACE USA, INC</b> <b>ENGINEERING ORDER</b>	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23		

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: ~~"SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS-3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

### DETAIL F: END FINISHING DETAIL



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order Summary

Monday, July 18, 2011 10:11:49 AM

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Criteria : Work Order ID: 68676 Item ID: D206-642-545 Product Family SKIDTUBES  
 Work Order Start Dates 4/19/2011 to 4/19/2011 11:59:59 PM Work Order Required Dates 5/16/2011 to 5/16/2011 11:59:59 PM  
 All References  
 Work Order Status Released

Work Order ID 68676 Required Qty 1.0000 Status Code Released  
 Item ID D206-642-545 Accepted Qty 0.0000 Scrap Qty 0.0000  
 Item Name Skidtube  
 Current Acct Value \$1,621.677 Sales Order ID

Start Date 4/19/2011 Required Date 5/16/2011 Completed Date  
 Standard \*\* Actual \*\* \*\* Acct. Value \*\* \*\* Variance \*\* \*\* Variance % \*\*

Direct Costs	Total	Each	Each	Each	Each
Material	\$0.000	\$0.000	\$191.972	\$191.972	100.00%
Labor	\$112.801	\$0.000	\$590.990	\$590.990	100.00%
Outplant	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.011	\$0.011	100.00%
Fixed Burden	\$149.173	\$0.000	\$838.703	\$838.703	100.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
<b>** Total **</b>	<b>\$261.974</b>	<b>\$0.000</b>	<b>\$1,621.677</b>	<b>\$1,621.677</b>	

## Work Center HandFinish

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
EWER02												
	6/17/2011											
120			0.00	0.00	0.47	0.47	1.00	\$0.000	\$7.830	\$8.534	\$0.000	\$16.364
<b>Total:</b>			0.00	0.00	0.47	0.47	1.00	\$0.000	\$7.830	\$8.534	\$0.000	\$16.364

## Work Center Skidtubes

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
BURY01												
	6/14/2011											
110			0.00	0.00	1.00	1.00	1.00	\$0.000	\$20.569	\$27.558	\$0.000	\$48.127
110			0.00	0.00	1.78	1.78	1.00	\$0.000	\$36.804	\$49.309	\$0.000	\$86.113
ELLI01												
	6/2/2011											
110			0.00	0.00	0.60	0.60	1.00	\$0.000	\$12.483	\$16.724	\$0.000	\$29.207
LEGE01												
	5/30/2011											
110			0.00	0.00	1.30	1.30	1.00	\$0.000	\$26.777	\$35.876	\$0.000	\$62.653
PAQU03												

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Work Order Summary

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5/26/2011

110	0.00	0.00	3.63	0.40	9.00	\$0.000	\$8.338	\$11.171	\$0.000	\$19.509
<b>Total:</b>	0.00	0.00	8.31	5.08	13.00	\$0.000	\$104.971	\$140.639	\$0.000	\$245.610



NO. 291

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 83400  
Part number: A206-642-541  
Description: Skid tube  
Welding Process: Tig[☒] Mig[ ]  
Base material: Alum.  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[☒] fail[ ]  
Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier David Kewal Date of Test Coupon 12.04.26

Welder Barclay Elliott Date of Test Coupon 12.04.26

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

